

Reply Under 37 CFR 1.116—Expedited Procedure  
Technology Center 1634

Atty. Dkt. No. 074022-3303

#### Remarks

The present amendments are made without prejudice to further prosecution and solely for the purpose of securing quick allowance of clearly allowable subject matter. These amendments present the claims in better form for consideration on appeal. Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Support for the amendment of claim 51 is found, *inter alia*, at page 10, lines 4-23 of the specification.

The Examiner rejected claims 51-52, 55-60, 66-68, 71-76, and 82 under 35 U.S.C. 102(e) as allegedly being anticipated by Kobashi (USP 5,777,372). The device disclosed by Kobashi is an electronic detection device that detects changes in the electrical potential of a solution (Col 15, line 30 et seq., Examples) based on the action of a "bioidentifier" (Col. 1, line 40). The device of biosensor of Kobashi does not contain an optically functional layer where an optical property is detectably altered upon a **change in mass** on the optically functional layer related to analyte binding. Indeed, the device of Kobashi is not based on optical detection at all but discloses detection based on a change in charge in the solution detected with a diode. While the Examiner points to Col. 10, lines 8-25 of Kobashi (Office Action mailed 5/27/03, p. 7), this passage fails to disclose an optical property detectably altered upon a **change in mass** on the optically functional layer related to analyte binding, as recited in the present claims. This passage discloses that electron carriers can be injected into the diamond film **77** depicted in Fig. 18 of Kobashi, and that these carriers can generate a short wavelength light that can be detected by a photodetector when a target analyte is present in the solution into which the electrode is placed. However, in this disclosure of Kobashi, the analyte of interest does not bind "**directly to the diamond-like carbon,**" as recited in the present claims. Therefore, this disclosure of Kobashi also fails to disclose or suggest the presently claimed invention. This version of

Reply Under 37 CFR 1.116—Expedited Procedure  
Technology Center 1634

Atty. Dkt. No. 074022-3303

Kobashi also fails to disclose that the optical property “is detectably altered **upon a change in mass** on said optically functional layer related to analyte binding,” since no binding occurs in this version of Kobashi’s biosensor.

Regarding claims 67-82, the Examiner states that Kobashi discloses a layer of diamond-like carbon of between about 50 angstroms to about 3,000 angstroms at Col. 7, lines 10-22 (Office Action mailed 5/27/2003, p. 4). First, it is first noted that the claim recites “50 angstroms to about 500 angstroms,” **not** 3,000. Second, Kobashi states that the thickness of the undoped diamond base layer is “between 1 and 50  $\mu\text{m}$ ,” (Col. 7, line 16). The 50-500 angstroms recited in the claim corresponds to 0.005  $\mu\text{m}$  and 0.05  $\mu\text{m}$  (10,000 angstroms = 1  $\mu\text{m}$ ). Therefore, the range recited in the claims is 20-200x thinner than those disclosed by Kobashi and the disclosure of Kobashi does not overlap the ranges recited in the claim 67.

Yu discloses methods of applying diamond-like carbon film on a substrate, but does not disclose any device having the elements recited in the claims. Therefore, Yu does not cure the deficiencies of Kobashi as explained above. Turner also fails to disclose these elements, and therefore, combining Kobashi with Turner does not render the present claims obvious.

The Applicants maintain that Choi is non-analogous art. However, this point is moot in view of the present claims, since Choi also does not disclose the elements missing from Kobashi.

The Examiner also provisionally rejects claims 51-82 under the judicially-created doctrine of obviousness-type double patenting as being unpatentable over claims 7, 11, 23-34 and 38-50 of copending Application Serial No. 08/950,963. The Applicant will submit a terminal disclaimer over the cited application if all claims are issued in their present form.

Reply Under 37 CFR 1.116—Expedited Procedure  
Technology Center 1634

Atty. Dkt. No. 074022-3303

**Conclusion**

Applicant believes that the present application is now in condition for allowance.  
Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a  
telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be  
required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to  
Deposit Account No. 50-0872. Should no proper payment be enclosed herewith, as by a check  
being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even  
entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit  
Account No. 50-0872. If any extensions of time are needed for timely acceptance of papers  
submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and  
authorizes payment of any such extensions fees to Deposit Account No. 50-0872.

Respectfully submitted,

Date Sept. 10, 2003

By Richard S. Pietro

Richard J. Warburg  
FOLEY & LARDNER  
Customer Number: 23620

Richard San Pietro  
Attorney for Applicant  
Registration No. 45,071  
for Richard J. Warburg



23620

PATENT TRADEMARK OFFICE

Telephone: (858) 847-6700

Facsimile: (858) 792-6773

RECEIVED  
CENTRAL FAX CENTER

SEP 10 2003

OFFICIAL